

# FOUR NEW SPECIES OF PLANTS ENDEMIC IN THE MACDONNELL AND GEORGE GILL RANGES, CENTRAL AUSTRALIA

by

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## SUMMARY

The dicotyledonous species *Portulaca filsonii* (Portulacaceae), *Euphorbia sarcostemmoides* (Euphorbiaceae), *Ricinocarpus gloria-medii* (Euphorbiaceae) and *Leucopogon sonderensis* (Epacridaceae) are described as new, and their affinities discussed.

As far as known, all are endemic in the Macdonnell and George Gill Ranges of Central Australia where they are restricted to rocky habitats. Descriptions of at least 15 other endemic seed-bearing plants have been published from time to time for this rich botanical province, the most remarkable being *Macrozamia macdonnellii* (a cycad) and *Livistona mariae* (a lofty palm): several other entities, e.g. *Goodenia* spp., still await publication. Some of these endemics would undoubtedly be categorized as relic populations, persisting from the wetter Pleistocene period in refugial niches of the central mountain mass long after their obliteration elsewhere through excessive aridity of some 4000–6000 years ago (see Chippendale, 1963).†

## PORTULACACEÆ

### *Portulaca filsonii* J. H. Willis, sp. nov.

(Sect. *Siphonopetalum*—fide F. Mueller in *Fragm. Phyt. Aust.*, 1877.)

*P. armitii* F. Muell. (Queenslandiae Borealis) maxime accedens, sed differt sic: foliis bullatis papillosis, pedicellis brevioribus, parte inferiore calycis dilatata multo latioreque, corollae tubo brevioris et minus exserto, petalis dimidio brevioribus (3–4 mm longis) atque seminibus asperioribus duplo latioribus (1 mm).

Herba perennis, parva, prostrata, succulenta, rubescens, rhizomate tuberiformi praedita, iterum atque iterum dichotome egerminans, tegetes (5–10 cm latas) formare. Rami carnosiusculi, roseo-brunnei, minute papilloso, 1–2 mm lati, ramulis ultimis 10–20 mm expedite disarticulatis, sine appendiculatis stipularibus. Folia opposita, perbeviore petiolata, rotunda vel reniformia, plerumque 5–8 mm longa et lata, carnosiuscula, rufoviridia, tenuiter et acute papillosa, super manifeste bullata venis paucis immersis, subter plana vel paulo rugulosa plus minus purpurea, marginibus integris paululum recurvis. Flores breviter pedicellati, in axillis terminalibus bractearum foliacearum, a bracteolis minutis subulatis subtensi; pedicellus crassus,  $\pm$  1 mm longus, in calycis-basin (hemisphaericam usque late pyriformem) repente dilatans. Calyx tubulatus, ruber, dense

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† G. M. Chippendale, "The relic nature of some Central Australian Plants", *Trans. Roy. Soc. S. Aust.* 86: 31–34 (1963).

*Muelleria* 3 (2): 89–101 (1975).

papillosa, 8–9 mm longa; pars basilaris dilatata, cupulata,  $2 \times 2\text{--}3$  mm, ovarium inseparabiliter includens, deinde subito contracta et cylindracea, ad anthesin duobus lobis liberis (quoque elliptico 2–3 mm longo). Corolla infundibuliformis, rosea; tubus 5–7 mm longus,  $\pm 1$  mm latus; lobi 4, late obovati usque paene rotundi,  $3\text{--}6 \times 2\text{--}4$  mm, venuste venulosi, arcte imbricati, donec plene expandentes. Stamina 4, a corollae-lobis alternantes; filamenta pergracilia, 3–4 mm longa, ad faucem affixa; antherae flavae, versatiles, oblongae vel late ellipticae, 0.7 mm longae. Ovarium dimidio inferius, hemisphaericum, uniloculare, eius superficies paene plana flava multis lineis radialibus indistinctis ornata; stylus pergracilis, 7–9 mm longus, ad apicem in duas superficies stigmaticas laciniato-papillatas divisus; ovula numerosa, late ellipsoidea, prope medium basis affixa. Capsula rubra, 3–4 mm lata ad maturitatem membranacea, supra medium circumscindens; semina  $\pm 8$  per capsulam, rotunda vel guttuliformia, lenticularia, 1 mm lata, rufo-brunnea, nitentia sed perminute asperulata.

**HOLOTYPE:** Kings Canyon, George Gill Range, Central Australia, forming scattered rosettes amongst “buckshot” gravel over slabs of sandstone rock, above the eastern brink of main falls and pool ( $24^\circ 16'S$ ,  $131^\circ 35'E$ )—J. H. Willis s.n. 30.vii.1966 (MEL 501441).

**ISOTYPES:** (MEL 501455, and AD, CANB, NT).

**OTHER COLLECTIONS EXAMINED:** Redbank Gorge, west of Mount Sonder, Central Australia ( $23^\circ 32'S$ ,  $132^\circ 32'E$ )—R. B. Filson, 14.v.1957 (photo only); Kathleen Gorge, George Gill Range, Central Australia ( $24^\circ 20'S$ ,  $131^\circ 41'E$ )—H. A. Morrison s.n., 21.vii.1964 (MEL 501442); Bagot Springs, George Gill Range, Central Australia ( $24^\circ 23'S$ ,  $131^\circ 48'E$ )—H. A. Morrison & J. H. Willis s.n. 28.vii.1966 (MEL 501443); Trepina Gorge, E. Macdonnell Ranges, Central Australia, rocky scarps on south side of gorge,  $\pm 5$  km north of Ross River road ( $23^\circ 33'S$ ,  $134^\circ 25'E$ )—J. H. Willis s.n., 1.vi.1974 (MEL 501444).

*Herb* small, perennial, prostrate, succulent, reddish, springing from a tuberiform rootstock to 10 mm thick, forming isolated determinate mats 5–10 cm wide, repeatedly and dichotomously branched. *Branches* fleshy, pinkish-brown, minutely papillose, 1–2 mm wide, the branchlets 5–20 mm long, readily disarticulating at the junctions; stipular appendages absent, the branch-axils quite naked. *Leaves* opposite, on very short petioles to 1 mm long, rotund to reniform, mostly 5–8 mm long and wide, readily detaching, fleshy, finely and sharply papillose, reddish-green, prominently bullate above with few deeply immersed veins, plane to slightly rugulose on the purplish underside; the entire margins slightly recurved; cotyledons green, elliptical,  $\pm 4.0 \times 1.2$  mm. *Flowers* shortly pedicellate, few together in terminal axils of leaf-like bracts, subtended by several subulate bracteoles  $\pm 0.5$  mm long; pedicel thick,  $\pm 1$  mm long, dilating abruptly into the hemispherical to broadly pyriform calyx-base which is closely adnate to ovary. *Calyx* tubular, red, densely papillose, 8–9 mm long,

the dilated basal part cupulate, 2 mm long and 2–3 mm wide, inseparably enclosing ovary, thereafter sharply contracted and cylindrical, with the two lobes free at anthesis (each lobe elliptic, obtuse and 2–3 mm long.) *Corolla* infundibuliform, rose-pink; tube 5–7 mm long and  $\pm 1$  mm wide; lobes 4, broadly obovate to almost rotund,  $3-6 \times 2-4$  mm, delicately veined, tightly imbricate until full expansion. *Stamens* 4, alternating with corolla-lobes and reaching half-way along lobes; filaments very slender, 3–4 mm long, attached at throat; anthers versatile, yellow, oblong to broadly elliptic, 0.7 mm long. *Ovary* half-inferior, hemispherical, 1-locular, the upper surface almost flat, yellow, with many faint radial striations (as seen after secession of the calyx-tube); style very slender, 7–9 mm long, divided at summit into two stigmatic, lacinate-papillate surfaces that form a capitate structure  $\pm 0.6-0.7$  mm wide; ovules numerous, attached near centre of base, broadly ellipsoid. *Capsule* red, 3–4 mm wide, membranous at maturity, circumscissile above the median equator; seeds  $\pm 8$  per capsule, 1 mm wide, red-brown, highly lustrous, rotund to pip-shaped, lenticular with narrow flange, minutely roughened with scattered echinulae.

This remarkable little plant appears to have closest affinities with *Portulaca armitii* F. Muell. (1877), described from material collected nearly a century ago in the riverine region of North Queensland; but the two species can be distinguished as follows:

Leaves bullate, sharply papillose; pedicels  $\pm 1$  mm long;  
dilated base of calyx 2–3 mm wide; corolla-tube  
5–7 mm long, petals 3–6 mm; seeds  $\pm 1$  mm  
wide .. .. . *P. filsonii*

Leaves non-bullate, not or only obscurely papillose;  
pedicels 1–3 mm long; dilated base of calyx  
1–1.5 mm wide; corolla-tube 8–10 mm long,  
petals 6–8 mm; seeds  $\pm 0.5$  mm wide. . *P. armitii*

An exotic species, *P. sedoides* Welwitsch ex D. Oliver (1868) from Angola, West Africa, also bears some relationship in the tetramerous section *Siphonopetalum*; but it is a suberect plant with oval or even lanceolate leaves, sessile flowers in leafy cymes and seeds only 3–7 per capsule. In *Trans. Roy. Soc. S. Aust.* 86 : 8 (1963), G. M. Chippendale had recorded two collections of *P. filsonii* (from Ooraminna and Arltunga) under the name of *P. bicolor* F. Muell. var. *rosea* Maiden & Betcher.

Of the four new species now described, *P. filsonii* has by far the widest range, extending across the George Gill and Macdonnell Ranges for at least 331 km between Kings Canyon in the west and Arltunga in the east—with northerly occurrences at Mounts Zeil and Sonder. In all localities it appears to be only very sparsely distributed, the isolated colonies consisting of a few or even single plants.

## PLATE 4



*Portulaca filsonii*—Redbank Gorge, Central Australia.

Photo. R. B. Filson, 1957.



*Euphorbia sarcostemmoides* (habit)—Ormiston Gorge, Central Australia.

Photo. J. H. Willis, 1974.



The author takes great pleasure in bestowing the epithet "*filsonii*" as a well merited tribute to his esteemed friend and colleague, Mr. Rex B. Filson, who was first to discover, gather and photograph this rock-loving species in the western Macdonnell Ranges, at Redbank Gorge near Mt. Sonder during May 1957.

## EUPHORBIACEÆ

### *Euphorbia sarcostemmoides* J. H. Willis, sp. nov.

(Sect. *Euphorbium*. Subsect *Tirucalli*—fide F. Pax in *PflFam.*, 1896)

Forsan proxime accedit *E. mauritanicum* L. (Africae Australis) qua similis in habitu, amplitudine, atque caulibus nudis, sed manifeste differt: cymis iterum atque iterum dichotomis (haud umbellatis), bracteis floralibus geminatis spathulatis, involucri parviori (2–3 mm lato) glandibus 5 reniformibus percontiguis et lobis involucralibus 5 alternis multo parvioribus fortiter introrsum arcuatis praedito—cf. glandes 5–8 *E. mauritanicae* quae cum lobis magnis bifidis margine ciliatis alternant.

Frutex erectus, glaber, succulentus, caesio-viridans, multo egerminans, 40–150 cm altus. Rami plus minus erecti, alternati, teres, ramulis ultimis 3–5 mm spissis. Folia evidenter absentia (sed fortasse in propaginibus sat juvenilibus praesentia). Inflorescentiae terminales late cymosae, 2–6 cm longae, 3–4 cm latae, quater vel quinter dichotome divisae, quaeque ut videtur unisexualis, ramulis ultimis congestis. Bractee ad basin pedunculi geminae, breviter spathulatae, erubescens, 2–4 mm longae, in marginibus interdum obscure crenatae atque in superficie (concava) plus minus hirsutae. Cyathium sat infundibuliforme, 2·5–3·5 mm longum et latum, intus breviter pilosum; glandes 5, paene contiguae, flavae vel erubescens, glabrae, reniformes, plus minus auriculatae, 1–2 mm latae; lobi intervenientes obscuri, intus arcuati perpilosique. Flores staminati numerosi; pedicelli  $\pm$  1 mm longi, pallidi, crassi, paxilliformes; filamentum  $\pm$  0·6 mm longum; antherae loculi perlate divaricati, pilulares, 0·10–0·25 mm longi et lati. Flos pistillatus usitate solitarius; pedicellus  $\pm$  1·5–2·0 mm longus, purpurascens, crassus, a perianthii-disco inchoato terminatus. Ovarium in disco sessile, purpurascens, glabrum, 1–2 mm longum et latum, triloculare et obtuse triangulare, quaeque superficies a costa obscura ornata; styli 3, in columna per 0·5 mm conjuncti, deinde separati divergentes atque decurvati, apicibus obtusis bifidis  $\pm$  0·5 mm longis. Capsula olivaceo-rubescens, 5–6 mm diametro, tribus angulis rotundatis, ob pedicellum (3–4 mm longum) procul involucri exserta; semina 3, late oblongo-ellipsoidea, 3 mm longa, laevia, in coloribus cremeis et roseo-brunneis longitudinaliter maculata, funiculo albo perbrevis (0·2 mm) instructa sed sine caruncula.

HOLOTYPE (with fruits): Kings Canyon, George Gill Range, Central Australia, localized but abundant among hard lateritized sandstone rocks of the plateau-top above eastern brink of main falls and pool (24° 16'S, 131° 35'E)—J. H. Willis & H. Alan Morrison s.n., 30.vii.1966 (MEL 501445-A).

ISOTYPES: (AD, NT).

PARATYPES (with male flowers): Ibidem—J. H. Willis & H. Alan Morrison s.n., 30. vii. 1966 (MEL 501445-B, MEL 501456, and AD, NT).

OTHER COLLECTIONS EXAMINED: Kings Canyon, George Gill Range, Central Australia ( $24^{\circ} 16'S$ ,  $131^{\circ} 35'E$ )—H. Alan Morrison s.n., 2.ix.1967 (MEL 501446, and CANB); Ormiston Gorge, Macdonnell Ranges, Central Australia, localized on a south-facing rocky scarp of southern canyon wall ( $23^{\circ} 38'S$ ,  $132^{\circ} 44'E$ )—J. H. Willis s.n., 9.vi.1974 (MEL 501447).

Shrub 40–150 cm high, tufted, erect, succulent, glabrous, grey-greenish and much branched. Branches suberect, alternate, terete, the ultimate branchlets 3–5 mm thick. Leaves absent, but doubtless produced on very young growth where probably small and somewhat spathulate—as in the persisting bracts of the floral branchlets. Inflorescences each apparently unisexual, terminal, broadly cymose, 2–6 cm long and 3–4 cm wide, dichotomously divided 4–5 times, the ultimate branchlets congested. Bracts in pairs at base of each peduncle, shortly spathulate, reddish, 2–4 mm long, sometimes obscurely crenate on margin and more or less hairy on the upper (inner) concave surface. Cyathium broadly funnel-shaped, 2.5–3.5 mm long and wide, shortly hairy inside; glands 5, almost or quite touching each other, yellow to reddish, glabrous, reniform and more or less auriculate, 1–2 mm broad; intervening lobes obscure and inarched, very hairy inside. Staminate flowers numerous on pale, thick, peg-like pedicels  $\pm 1$  mm long; filament  $\pm 0.6$  mm long; anther loculi very widely divergent, pilular, 0.10–0.25 mm long and wide. Pistillate flower usually solitary on a thick purplish pedicel ( $\pm 1.5$ –2.0 mm) surmounted by a rudimentary perianth-disk. Ovary sessile on disk, purplish, glabrous, 1–2 mm long and wide, 3-locular and bluntly 3-angled with an obscure rib on each face; styles 3, united in a column for 0.5 mm, then free, divergent and decurved, with blunt bifid tips  $\pm 0.5$  mm long. Capsule olive to reddish, exserted far beyond involucre on a pedicel 3–4 mm long, 5–6 mm in diameter, with rounded angles; seeds 3, broadly oblong-ellipsoid, 3 mm long, smooth, longitudinally mottled in cream and pinkish-brown, with a very short (0.2 mm) white funicle but no caruncle.

This new and rather tall spurge seems to bear little relationship to any other species of *Euphorbia* hitherto described from Australia. As a very succulent, leafless, long-lived perennial, its closest affinity is perhaps to the South African *E. mauritanica* L. which it certainly resembles in habit, size and leaflessness at the flowering stage; but there are manifest floral differences, viz.:

Cymes repeatedly dichotomous; floral bracts paired, spathulate; involucre 2–3 mm wide; glands 5, reniform, 1–2 mm broad, closely contiguous, alternating with 5 much smaller, entire and strongly inarched involucral lobes . . . . .  
 . . . . . *E. sarcostemmoides*

Cymes umbellate; floral bracts about 3, obovate, ciliate; involucre 7–10 mm wide; glands 5–8, subrotund, 1.5–2.5 mm broad, alternating with large bifid lobes having ciliate margins . . . . .  
 . . . . . *E. mauritanica*

Up to the present, the only known occurrences are at the upper part of Kings Canyon, George Gill Range (type locality), and a much smaller colony on the southern side of Ormiston Gorge, some 126 km to the north-east. It is only to be expected that intermediate occurrences, and perhaps others farther afield, still await discovery.

The specific epithet is in allusion to the very striking resemblance of this plant to erect forms of the widespread caustic-bush, *Sarcostemma australe* (Asclepiadaceae), for which it can easily be mistaken at a distance.

### ***Ricinocarpus gloria-medii* J. H. Willis, sp. nov.**

Ut videtur ad *R. velutinum* F. Muell. (Australiae Occidentalis intraterraneae) appropinquat, sed differt: foliis angustioribus (1.5–2.5 mm latis), inflorescentias excedentibus, eorum, superficiebus perminute stellato-pilosis vel subglabris (non tomentosis) et nervis mediis obscuris ob margines fortiter revolutos; pedicellis longioribus (8–20 mm); staminibus pluribus ( $\pm 80$ ); tribus stylis multo brevibus (3–4 mm), extus plus minus tomentosis, quoque paene ad basin scisso; ovario aequabiliter tomentoso a pilis brevibus (minus quam 1 mm, numquam villosis a pilis 2–3 mm longis).

Frutex plus minus erectus vel diffusus, ramulosus, 75–200 cm altus, partibus junioribus (et infra folia) dense stellato-pubescentibus. Folia anguste linearia, 30–60  $\times$  1.5–2.5 mm, ascendunt vel suberecta, in superficiebus minute stellata usque subglabra, pilis non impendentibus (stellis majoribus  $\pm 0.1$  mm diametro); margines saepe arcte revoluti, ita venam mediam obscurantes. Flores pulcherrimi, pentameri, 3–5 in fasciculis terminalibus, quisque 1.5–2.5 cm diametro, a foliis floralibus multum exceduntur. Plantae aut omnino masculinae aut androgynae; flore femineo per inflorescentiam singulare longius pedicellato, floribus 1–4 masculinis brevius pedicellatis circumdato. Pedicelli 8–20 mm longi, ut in calycibus ab indumento stellato pallide brunneo obtecti, primum summam versus parte bracteolarum linearium (3–5 mm longarum) praediti. Calyx florum masculinorum et femineorum 6–8 mm longa, eius lobi imbricati obtusi 3–4 mm lati. Petala 5 alba vel pallide crenea, late oblongo-elliptica, obtusa, omnino glabra, 8–12 mm longa. Stamina  $\pm 80$ , lutea in columna (5–7 mm alta) dense aggregata; pes androphori robustus, 1–2 mm longus; antherae oblongae, reflexae,  $\pm 0.5$  mm longae. Ovarium globulare vel ovoideum, 3–4 mm diametro, dense albo-tomentosum a pilis minus quam 1 mm

longis; styli tres 3–4 mm longi, ligulati, quisque usque ad basin in duobus ramis scissus, extus plus minus albo-tomentosi per dimidium inferius. Fruges et semina non visa.

HOLOTYPE (with female flowers): Simpsons Gap, Macdonnell Ranges, Central Australia (23° 41'S, 133° 43'E)—*H. Alan Morrison s.n.*, 19.vi.1972 (MEL 501448).

ISOTYPES: (NT, AD).

PARATYPES (with male flowers only): Ibidem—*H. Alan Morrison s.n.*, 19.vi.1972 (MEL 501449, and AD, BRI, CANB, NSW, NT, PERTH).

OTHER COLLECTIONS EXAMINED (male and/or female): Simpsons Gap, Macdonnell Ranges, Central Australia, growing on a talus amongst quartzite rocks and boulders, in partial shade against the foot of tall cliffs about 0.5 km east from car park at entrance to Gap (23° 41'S, 133° 43'E)—*J. H. Willis s.n.* (with *H. A. Morrison, A. C. Beaglehole & G. Carr*), 15.vi.1974 (MEL 501450 & 501466, and AD, BRI, CANB, NSW, NT, PERTH, BM, K, L); ibidem (male flowers only)—*Flora McDonald s.n.*, 16.vii.1966 (MEL 501451).

*Shrub* more or less erect or spreading, 75–200 cm high, twiggy, the younger parts (and under-side of leaves) closely stellate-pubescent and hoary. *Leaves* narrow-linear 30–60 × 1.5–2.5 mm, their upper surfaces with only minute and non-overlapping stellate hairs (the larger ± 0.1 mm in diameter) or almost glabrous, ascending or suberect; margins strongly revolute so as often to obscure the mid-vein. *Flowers* beautiful and orange-blossom-like, pentamerous, 1.5–2.5 cm wide when fully expanded, borne in leafy terminal clusters of 3–5 and much exceeded by the floral leaves. Plants either exclusively male or the inflorescence consisting of a single, longer-stalked female flower surrounded by 1–4 shortly pedicellate male flowers. *Pedicels* 8–20 mm long, covered as is the calyx with a close pale brownish stellate indumentum, at first bearing a pair of linear tomentose bracteoles (3–5 mm long) towards the top. *Calyx* in both male and female flowers 6–8 mm long, cleft almost to the base into blunt imbricate lobes 3–4 mm wide. *Petals* 5, white or creamy, glabrous, blunt, broadly oblong-elliptic, 8–12 mm long. *Stamens* ± 80, pale yellow, in a dense cluster 5–6 mm high, fused at the base on a short stout column (androphore) 1–2 mm long; anthers oblong, reflexed, ± 0.5 mm long. *Ovary* globular-ovoid, 3–4 mm in diameter, uniformly and densely white-tomentose, with hairs less than 1 mm long; styles 3, ligulate, 3–4 mm long, each one split almost to the base into equal arms, the outer surface more or less white-tomentose for up to half or even two-thirds the total length. Mature fruit and seeds not seen.



PLATE 5



*Ricinocarpus gloria-medii* (habit)—Simpsons Gap, Central Australia.

Photo. H. A. Morrison, 1974.



*Ricinocarpus gloria-medii* (male flowers)—Simpsons Gap, Central Australia.

Photo. H. A. Morrison, 1974.

A most restricted species, the only known colony of which occupies less than one hectare at the top of a steep rocky talus near the southern end of Simpsons Gap—only 22·5 km by road west from Alice Springs. Affinities lie with *Ricinocarpos velutinus* F. Muell. (1875), from the Watheroo, Irwin River and Lake Deborah areas of Western Australia; but the principal points of distinction from this shrub may be summarized as follows:

Leaves mostly less than 3 mm wide, not hoary-tomentose on both sides, the larger stellae on  $\pm$  glabrescent upper surfaces  $\pm$  0·1 mm wide; inflorescence far exceeded by the floral leaves; pedicels 8–20 mm long; styles 3–4 mm long, split much more than half-way to base, often woolly externally; ovary with uniform indumentum less than 2 mm thick . . . . .  
 . . . . . *R. gloria-medii*

Leaves mostly 3–5 mm wide, hoary-tomentose on both surfaces, the smaller stellae to 0·2 mm wide; inflorescence as high as the floral leaves; pedicels less than 10 mm long; styles 4–7 mm long, split about half-way to base, glabrous; ovary tomentose and crowned by dense villous hairs 2–3 mm long . . . . . *R. velutinus*

Fruiting material remains a desideratum.

It is astonishing that a large shrub like *R. gloria-medii*, so near to Alice Springs and so spectacular when in bloom, should have escaped detection until July 1966. At that time Miss Flora McDonald, while participating in an ornithological excursion to the Simpsons Gap area, casually included a small sprig of male *Ricinocarpos* flowers among others to be identified by the writer. The snippet evoked immediate interest, as something new to the Centre, but nothing could be done until more adequate material became available for study. In June 1972 Mr. H. Alan Morrison re-located this occurrence, made photographs "in situ" and brought good material (including the type) back to Melbourne. For sheer magnificence, with flowers resembling orange blossom, *R. gloria-medii* has no rival in the Centralian flora. "Glory-of-the-Centre" thus leapt to mind as an appropriate title for inclusion in the binomial here formally adopted.

PLATE 6



*Ricinocarpos gloria-medii* (female flowers)—Simpsons Gap, Central Australia.

Photo. H. A. Morrison, 1974.



*Leucopogon sonderensis*—Mount Sonder, Central Australia.

Photo. H. A. Morrison, 1966.



## EPACRIDACEÆ

**Leucopogon sonderensis** J. H. Willis, sp. nov.

(Sect. *Pleuranthus*. Ser. *Planifoliae*—*fide* G. Benth in *Flor. Aust.*, 1869)

Ex affinitate *L. mitchellii* Benth. (quocum olim confusa) sed differt sic: superficiebus foliorum siccorum haud nitidis, bracteis et sepalis manifeste albo-ciliolatis, corollae-tubo quam lobis saltem duplo longiore, ovario 4-loculari (cf. 5-loculari in *L. mitchellii*), stylo a pilis minutis sparse oblecto (non glabro), staminum filamentis a corolla liberis non plus quam 1 mm (cf.  $\pm 2$  mm in *L. mitchellii*), atque antheris 1.5–2.0 mm longis.

Frutex erectus vel diffusus ramulosus, 150–200 cm altus, ramulis glabris sed sensim pertenuiter canescentibus. Folia late expansa usque subimbricata (in surculis), glabra, 10–15 mm longa et 2.5–4.0 mm lata, elliptico-lanceolata, ad basin subito contracta in petiolum perbreve, ad apicem gradatim angustantia in acumen pungentem  $\pm 2$  mm longum; superficies leniter concava, sine nitore atque perobscurè venulosa; folium contra (subter) a venulis 30–40 flabellate expansis tenuiter lineatum, venis 5 majoribus interioribus paene parallelis. Flores pentameri, inter folia superiora collecti, praecipue uno per axillam; pedicellus pubescens, 1–2 mm longus. Calyx sat angusta, 4–5 mm longa, lobis obtusis minute ciliolatis stricte imbricatis, ad basin a bracteis vaginata; bractee circa 5, perlate ovatae vel rotundae, albo-ciliolatae, pare superiore majore 1.5 mm longo. Corolla albidula vel pallide viridis, 7–10 mm longa (quam calyx paene duplo longior); corollae-lobi acuminati, 3 mm longi, intus breviter et sparse albo-hirsuti. Antherae ellipsoideae,  $\pm 1.5$ –2.0 mm longae, subsessiles in summa corollae tubi ex quo protrudentes. Ovarium angustum,  $\pm 3$  mm longum, glabrum, quadriloculare; stylus gracilis, sparse pubescens, 5–6 mm longus, stigmate capitato 0.2–0.4 mm lato; ovula 2 per loculum, 2–3 mm longa, Drupa coccinea, nitida, late ovoidea,  $\pm 6 \times 5$  mm.

HOLOTYPE: Mt. Sonder, W. Macdonnell Ranges, Central Australia, among rocks near head of long steep gorge, at  $\pm 1330$  m alt. and  $\pm 0.4$  km N.N.E. of cairn on summit (23° 34'S, 132° 35'E)—J. H. Willis & H. A. Morrison s.n., 20.vii.1966 (MEL 501453).

ISOTYPES: (MEL 501452, and AD, NT, NSW).

OTHER COLLECTIONS EXAMINED: At high elevations on Mt. Sonder—R. Tate (Horn Exped.), June 1894 (MEL 501454).

*Shrub* slender, erect or spreading to 150 or even 200 cm tall, the branches glabrous but faintly canescent. *Leaves* widely spreading to subimbricate (on younger shoots), glabrous, 10–15 mm long, 2.5–4.0 mm wide, elliptic-lanceolate (sometimes almost ovate on young shoots), suddenly contracting at the base into a very short petiole and at the apex tapering into a fine pungent point  $\pm 2$  mm long; the upper slightly concave surface dull and very faintly nerved, the lower surface finely lined with 30–40 flabellately spreading veins of which the inner major 5 are almost parallel. *Flowers* pentamerous, concentrated in the upper axils where mostly solitary, on pubescent pedicels 1–2 mm long. *Calyx* rather narrow, 4–5 mm long, the blunt minutely



ciliolate lobes tightly imbricate, ensheathed at base by about 5 very broadly ovate to rotund and similarly white-ciliolate bracts, of which the much larger upper pair measures 1.5 mm in length. Corolla pale greenish-white, 7–10 mm long (almost twice the length of calyx); corolla-lobes acuminate, 3 mm long, on their inner surfaces shortly and sparsely bearded with crinkly white hairs; anthers ellipsoid, 1.5–2.0 mm long, almost sessile on and slightly protruding from the summit of the corolla-tube. Ovary narrow, 4-locular,  $\pm 3$  mm long, glabrous; ovules 2 per loculus, 2–3 mm long; style slender, sparsely pubescent, 5–6 mm long; stigma capitate, 0.2–0.4 mm wide. *Drupe* crimson, polished, broadly ovoid,  $6 \times 5$  mm.

It is remarkable that the large Australian heath family, *Epacridaceae*, should be represented in Central Australia by only a single species, and that one confined to the summit region of Mount Sonder above about 1000 m. Professor Ralph Tate collected the first specimens of it in June 1894, writing on the label "*Styphelia* cf. *Mitchellii*", but in his subsequent *Report of the Horn Scientific Expedition* 3: 177 (1896) he lists the plant as *S. mitchellii* (Benth.) F. Muell. without question. So it has remained—either as *S. mitchellii* or *Leucopogon mitchellii* Benth.—until 1972 when G. M. Chippendale, "Check List of Northern Territory Plants" in *Proc. Linn Soc. N.S.W.* 96: 211 & 253 (1972), listed this unique epacrid as an undescribed species of *Leucopogon*.

Comparison with a type specimen of *L. mitchellii* collected by Major T. L. Mitchell "near Lake Salvator Rosa" (i.e.  $\pm 119$  km southwest of Springsure, in Central Queensland), has shown that the Mount Sonder entity is not conspecific and requires description under a new name. Important differences in the Centralian heath are set out in the following key:

- Surfaces of dried leaves dull (mat); bracts and sepals manifestly white-ciliolate; corolla-tube at least twice as long as the lobes; ovary 4-locular; style sparsely hairy; staminal filaments free from corolla by no more than 1 mm; anthers 1.5–2.0 mm long . . . . . *L. sonderensis*
- Surfaces of dried leaves lustrous; bracts and sepals almost or quite non-ciliolate; corolla-tube less than twice the length of lobes; ovary 5-locular; style glabrous; staminal filaments free from corolla for  $\pm 2$  mm; anthers to 1.5 mm long . . . . . *L. mitchellii*

Since this noteworthy shrub is not uncommon in various ravines around the summit area, where endemic, adoption of a geographical epithet is appropriate in the name *Leucopogon sonderensis*.